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ABSTRACT

The study described in this report was conducted at the State University of New York (Geneseo) to determine which instructional variables were most responsible for students' liking or disliking for a course (student affect), course satisfaction, and voluntary participation in additional course work in a field (behavioral intent). The report first reviews research on the variables that influence students' attitudes toward a course, on course satisfaction, and on behavioral intention, and presents the research questions that were developed on the basis of these studies. The report then describes the study methods, indicating that the subjects were 262 undergraduates enrolled in ten courses representing a variety of course structures, contents, and instructional styles. Next, the report describes the instruments used to measure the predictor variables (i.e., course content, instructional method, text and readings, interaction with instructor, and the following dimensions of teacher credibility: sociability, composure, character, extroversion, and competence) and the criterion variables (i.e., affect toward, satisfaction with, and behavioral intent toward course content, instructor, and course in general). Finally, the study results are presented and discussed, revealing that students did equate affect and satisfaction and that instructional method was the greatest predictor of student affect. Statistical results are appended. (AYC)

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FACTORS CONTRIBUTING TO STUDENT AFFECT, SATISFACTION, AND BEHAVIORAL INTENTION: RESEARCH EXTENSION AT THE COMMUNITY COLLEGE

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FACTORS CONTRIBUTING TO STUDENT
AFFECT, SATISFACTION, AND BEHAVIORAL INTENTION:
RESEARCH EXTENSION AT THE COMMUNITY COLLEGE

How to facilitate learning has been a major concern for researchers and educators at all levels of education - primary, secondary, community college, and the four-year institute. A great deal of research in various disciplines has continually attempted to identify characteristics of teachers, students, subject-content, and classroom environments which enhance or facilitate student learning. The purpose of the present study was to focus specifically on the question, "Why do students like a course they have taken?"

Liking for a course is conceptualized as the student's outcome affect and satisfaction for a course they have taken. Affect has been defined as a person's feelings of liking or disliking toward and evaluation of some person, event, or object (Fishbein, 1966). Educationally relevant affects include feelings about school, about learning, about subject matter, and about the self as a learner (Bloom, 1976, p. 139). Closely related to affect and also the concern of this study is satisfaction - conceptualized as an affective response to the fulfillment of an expectation-type standard (Fishbein, 1966; Hecht, 1978; Smith, Kendall, & Hulin, 1969).

Knowing what maximizes the liking for a course could be invaluable to the instructor in creating a healthy classroom environment conducive for learning (e.g., Johnson, 1974; Vargas, 1977). Thus, this study was concerned with determining whether a specific instructional variable(s) generates more positive affect, satisfaction, and behavioral intention (as a measure of affect) toward a course from the students than do other variables.

Affect

Numerous studies have examined the influence of specific variables which affect the students' attitude toward a course. Cohen and Humphreys (1960), Gage (1961), and Lovel and Haner (1955) all found that instructors of required courses received significantly lower student ratings than instructors of elective courses.

A number of investigations have examined the relationship between attitudes and grades. Some studies have found no relationship between students' ratings of instruction and their actual or expected grades in a course (e.g., Bendig, 1953; Cohen & Humphreys, 1960; Remmers, 1960; Voeks & French, 1960) while others report a significant relationship between students' ratings of instruction and their actual or expected grades in a course (e.g., Anikeef, 1953; Rayder, 1968; Stewart & Malpass, 1966; Walker, 1969; Weaver, 1960). However, Costin, Greenough, and Menges (1971) point out that typically the positive relationship between grades and attitudes is relatively weak (i.e., correlations less than .30).

Gage (1961) found that instructors of lower-level courses were rated lower than the instructors of the more advanced courses. Closely related to the issue of "course level" is whether upperclassmen tend to have a more positive attitude toward a course than underclassmen do. Bendig (1952) found that upperclassmen were just the opposite; upperclassmen tend to have a more unfavorable attitude toward a course than the underclassmen.

McKeachie (1973), using Gough's California Psychological Inventory, found an insignificant relationship between the personality traits of the student and his/her attitude towards the course. Yonge and Sassenrath (1968), studying the relationship between students' self-reports of their personality traits and their attitudes toward

educational psychology instructors, also reported insignificant results. Getzels and Jackson (1963) reviewed 150 studies and concluded that little is known about instructor personality. Isaacson, McKeachie and Milholland (1963) studied the relationship between a variety of teacher personality variables and student ratings of instruction. They reported a high positive relationship between the instructor's "culture" (artistic, polished, imaginative, effectively intelligent) and his/her "overall effectiveness."

Mazzuca and Feldhusen (1978) reviewed the research literature in an attempt to identify major dimensions of effective college instruction. They found five potential dimensions: (1) instructional skill, (2) organization, (3) rapport, (4) work load, and (5) evaluation-feedback.

What are the implications of this literature for the college instructor? The inconsistencies in the research results render it difficult to ascertain what types of educational experience would most likely promote desirable positive affect. However, given the instructor's interaction with the number of variables either directly or indirectly under his or her control in the educational environment, it is apparent that the instructor plays a principal role in the development of positive student affect. Therefore, given the inconsistencies in the literature and the importance of generating affect in the classroom, the following research question was posed:

Q_1: Which instructional variables produce the most positive affect related to that course?

Satisfaction

While there are literally thousands of studies on the subject of employee satisfaction (Richmond & McCroskey, 1979), few investigations have focused on student satisfaction. McKeachie, in his report on student ratings of faculty or teaching performance (1969a; 1969b), suggests that probably the best procedure for establishing a criteria of teaching performance is to find out what factors influence students' level of satisfaction with a course. In an attempt to determine some of the criteria, McKeachie (1969b) found that students who performed particularly well on a test on various aspects of "critical thinking" rated their teachers as "more effective" than did students who performed poorly on the same test. These "more effective" teachers rated higher on the following items: clear explanations, stimulating students' intellectual curiosity, interesting presentation of course material, attention to student reactions, friendliness, permissiveness, and flexibility. In a similar study, Cohen and Berger (1970) found significant positive correlations between the performance of students on an objective examination and the ratings they gave their instructor in the area of "student interest" and "student-faculty interaction."

Hoffman (1977), in a study of teaching effectiveness, found the "knowledge and skill" of the instructor and "student involvement" to be the scales most highly associated with students' overall satisfaction with the instructor. Lathrop and Richmond (1967) and Lathrop (1968) found positive correlations between high ratings of instructors and the extent to which students thought they had achieved course objectives.

In a study concerning communication apprehension, student attitudes, and levels of satisfaction, Scott and Wheeless (1977) found that when any type of apprehension (oral, writing, receiver) was high, attitudes and satisfaction regarding discussion and oral assignments appeared low. Furthermore, the high receiver and writing apprehensives were less satisfied with teaching strategies employing receiving (lectures) and writing (in-class and out-of-class writing assignment) strategies respectively.

The research indicates that although satisfaction has received wide theoretical and empirical attention in the management and vocational literature, little research has been conducted concerning student satisfaction - particularly at the college level.

Therefore, the following research question was posed:

Q_2: Which instructional variables produce the most satisfaction related to that course?

In his review of literature, Hecht (1978) cautions that affect and satisfaction have frequently been equated in the satisfaction literature. Trow (1957), for example, conceived of satisfaction as need fulfillment and yet asked respondents, "Considering it as a whole, how much did you like your job?" Similarly, Mulder (1959, p. 181) conceptualized satisfaction as a social comparison process and yet stated, "We prefer the job-liking scale as a satisfaction measure." Richmond and McCroskey (1979) also presented them as synonymous. However, these investigators provided no theoretical or empirical justification for equating satisfaction with any other emotion.

Hecht (1978) suggests that affect and satisfaction are conceptually related but distinct. For example, a student might report a high level of affect for a course yet not be satisfied with the outcome of the course (He felt he hadn't gotten enough out of it.). On the other hand, a student might report an extremely low level of affect for a course but report a high level of satisfaction (It was a required course that's now out of the way.). Thus, in the educational setting it remains a question whether affect and satisfaction are isomorphic. Therefore, to determine whether these (affect and satisfaction) name the same response or can be differentiated, the following research question was posed:

Q_3: Do students equate or differentiate between the concepts of affect and satisfaction for a course?

Behavioral Intention

According to Bloom (1976), affect for a course may be defined behaviorally in terms of whether or not the student would voluntarily engage in additional course work in a particular area if free to make such a choice. Although it is obviously advantageous to have an actual behavioral measure of interest (e.g., student registering for another course in the area or a course with the same instructor); it is also impractical. However, Fishbein and Ajzen (1975) report research which suggests that "behavioral intentions" can be used as reasonable predictors of future student behavior. The strength of a behavioral intention is indicated by the person's subjective probability that he/she will perform the behavior in question, or in this case, elect to take additional course work.

Unfortunately, the relationship between behavioral intention and student affect has been largely neglected (Fishbein & Ajzen, 1975) with the exception of a study by Andersen (1978) (Andersen, in a study of undergraduate college students, found "immediacy" to be a good predictor of student affect and behavioral intention.). Therefore, this study also investigated the relationship among affect, satisfaction, behavioral intention, and instructional variables (possible contributors to liking a course). Thus, the following research question was posed:

Q_4: Which instructional variables produce the most behavioral intention related to that course?

Data Collection

The subjects used in this study were 262 undergraduate college students enrolled in one of 10 different courses. Courses were selected to provide a representative sample of courses at the university and thus also provided a variety of course structure, course content, and instructor style (e.g., formal lecture, informal group-centered teaching, lab courses, etc.). The instructor-course evaluation (predictor variables),

and the affect, satisfaction, and behavioral intent measures (criterion variables) were administered to all courses during the last class meeting of the semester. Students were told that they were involved in a research project designed to improve classroom teaching. They were asked to complete the instruments and guaranteed that their responses would in no way affect themselves or their instructor.

Measurement of Predictor Variables

The instrument measuring the instructional variables (i.e., instructor's course content, instructional method, text and readings, interaction with the instructor, and the dimensions of teacher credibility - sociability, composure, character, extroversion, and competence) was administered as a 24-item, five-step Likert-type scale. To validate dimensionality, the original instrument was divided into two parts - those items measuring general instructional variables and those measuring credibility, and then submitted to principal components factor analysis using promac rotation. A multidimensional interpretation was sought. In all factor analyses performed in this investigation, the criteria for extraction of factors was based on the following: each factor must have a minimum of two items loading at .60 and no secondary loading above .40.

Factor analysis of the first part of the instrument (i.e., general instructional variables) demonstrated a multidimensional solution of a 9-item scale (see Table 2). The four factor solution indicated that students differentiated among content, method, readings, and interaction.

Factor analysis of the second part of the instrument (credibility) also demonstrated an expected multidimensional solution and a 12-item scale. Consistent with previous research (McCroskey, Holdridge, and Toomb, 1974), the five-factor solution included sociability, composure, character, extroversion, and competence. Three items (sympathetic/unsympathetic; verbal/quiet; and unqualified/qualified) did not load properly on the expected factor; thus, they were deleted from the analysis (see Table 3).

The resulting reliabilities for each factored instructional variable were (Nunnally, 1967): instructor content (.78); instructor method (.77); text and readings (.80); student-instructor interaction (.60); sociability (.89); composure (.78); character (.67); extroversion (.65); and competence (.74).

Measurement of Criterion Variables

There were three criterion variables - affect, satisfaction, and behavioral intent. Subjects' level of affect toward the course was operationalized three ways: student affect (a) toward the content/subject matter of the course, (b) toward the course instructor, and (c) toward the course in general. Subjects' level of affect was assessed using four seven-step evaluative semantic differential scales that have been previously employed by Scott and Wheeless (1977) and Andersen (1978) to analyze student affect toward instruction, with reliability estimates ranging from .87 to .95. The bi-pollar adjectives were: good/bad, worthless/valuable, fair/unfair, and positive/negative.

Satisfaction was operationalized as the student's satisfaction (a) toward the content/subject matter of the course, (b) toward the course instructor, and (c) toward the course in general. Subjects' level of satisfaction was assessed using four seven-step evaluative semantic differential scales that have been previously employed by Scott and Wheeless (1975) to analyze student satisfaction toward instruction, with reliability estimates ranging from .95 to .96. The bi-pollar adjectives were: satisfying/unsatisfying, not gratifying/gratifying, fulfilling/unfulfilling, insufficient/sufficient.

Subjects' levels of behavioral intent (a) toward the content/subject matter of the course, (b) toward the course instructor, and (c) toward the course in general were assessed using the following three measures: (1) the likelihood of actually enrolling in another course of related content if a schedule so permits, (2) the likelihood of actually enrolling in another course taught by the same instructor if a schedule so permits, and (3) the likelihood of actually enrolling in another course like this one in general if a schedule so permits. Four, seven-interval, evaluative semantic differential scales were used for these measures (Osgood, Suci, & Tannenbaum, 1957): likely/unlikely, possible/impossible, probable/improbable, and would not/would. Previous research by Andersen (1978) reports reliability for similar scales to be .94.

RESULTS

Simple statistics were computed for all scales. The means and standard deviations of each scale are reported in Table 1. Statistical significance level for all tests was set at .05.

A priori, it was decided to examine the third research question first ("Do students equate or differentiate between the concepts of affect and satisfaction for a course?"). To examine the third posited research question, the instrument measuring the criterion variables (i.e., affect, satisfaction, and behavioral intent toward the course content/subject matter, course instructor, and course in general) was submitted to principal components factor analysis employing an oblique rotation. This resulted in a confusing four-factor solution (see Table 4). Examination of the interfactor correlations of the four-factor solution (see Table 5) indicated that a one-factor solution was a more desirable solution. All items loaded on the unrotated structure above .60 (see Table 6). Examination of the raw correlations between affect and satisfaction further supported the one-factored solution (see Table 7). The correlations between the affect variables and the satisfaction variables ranged from .53 to .83; corrected for attenuation (Nunnally, 1967), the correlations ranged from .54 to .84. Consequently, the criterion measures of affect, satisfaction, and behavioral intention were treated as a single factor (overall student affect toward the course) for testing the research question. The split-half reliability estimate for the combined measure was .99.

Canonical correlation analysis further supported the contention that there was one, and not three additional research questions. With the predictor group comprised of the three affect variables (i.e., subject, instructor, and general) and the criterion group comprised of the three satisfaction variables (i.e., subject, instructor, and general), the canonical correlation between the two groups of variables was .86. The correlation of the variables in both the predictor group and the criterion group with the derived canonical variate ranged from .78 to .95 (see Table 8).

In the first of the series of three canonical correlation analyses, the predictor group was comprised of all nine instructional variables, and the criterion group included all nine affect, satisfaction, and behavioral intention variables. The canonical correlation between the two groups of variables was .75. The correlation of the variables in the criterion group with the derived canonical variate ranged from .45 to .97 (see Table 9). The second analysis, omitting the dimensions of credibility from the predictor group, produced a correlation between the two groups of variables at .61. The correlation of the variables in the criterion group with the derived canonical variate ranged from .56 to .91. The third analysis, omitting the general instructional variables from the predictor group, produced a correlation at .72. Again, there was a high correlation between the variables in the criterion group and the derived canonical variate (.41 to .97). Thus, a single highly significant canonical variable was produced in each of the three analyses. And within each analysis there was a high correlation between variables in the criterion group and the derived canonical variate, ranging from .41 to .97.

Given the results of the statistical analyses, it was assumed that students do equate the concepts of affect and satisfaction. Therefore, the remaining three research questions were not examined. Instead, an additional research question was posited:

Q: Which instructional variables produce the most overall student affect toward a course?

A series of three multiple regression analyses was utilized to examine the new overall research question. In the first analysis, all nine instructional variables (i.e., content, method, readings, interaction, sociability, composure, character, extroversion, and competence) served as predictors with a summed score of overall student affect toward a course the criterion variable. The instructional variables accounted for 43% of the variance in overall student affect toward a course ($F = 21.23$, $p < .0001$, $df = 9$).

To get a better understanding of the variance accounted for in the first analysis, a second analysis was made that included only the general instructional variables (i.e., content, method, readings, and interaction) as predictors with overall student affect toward a course serving as the criterion variable. The general instructional variables accounted for 31% of the variance in overall student affect ($F = 28.56$, $p < .0001$, $df = 4$). Commonality analysis was employed to decompose R^2 (.3077) into its unique and common components of predictor variables (Seibold and McPhee, 1979). This analysis indicated that unique variance was attributable to each variable (content = .0216; method = .0876; readings = .0633; and interaction = .0005). Furthermore, various combinations of variables contributed substantially more explained variance (.1347) in the criterion. Moreover, examination of the summed unique and common effects for each variable did not change the order of significance of the predictor variables (i.e., method accounted for the most variance, and interaction still accounted for the least variance in overall student affect toward a course). See Tables 10, 11, and 12 for the results of this commonality analysis.

In the third analysis, the five dimensions of credibility (i.e., sociability, composure, character, extroversion, and competence) served as predictors with overall student affect serving as the criterion variable. The dimensions of credibility accounted for 34% of the variance in overall student affect ($F = 26.42$, $p < .0001$, $df = 5$). Commonality analysis was again employed to decompose R^2 (.3404) into its unique and common components of predictor variables. This analysis indicated that unique variance was attributable to each variable (sociability = .0216; composure = .0340; character = .0012; extroversion = .0215; and competence = .0367). Furthermore, various combinations of variables contributed substantially more explained variance (.2254) in the criterion. Also, the order of significance of the predictor variables did not change when the unique and common effects for each variable were summed. See Tables 13, 14, and 15 for the results of this commonality analysis.

DISCUSSION

As previously discussed, in the educational setting it remains a question whether affect and satisfaction are isomorphic or distinct concepts. The results of this study suggest that students do equate the two concepts for courses they have taken. In other words, if a student reports a high level of affect for a course, he/she will probably also report a high level of satisfaction for the course Conversely, a student reporting a high level of satisfaction will tend to report a high level of affect.

As stated previously, the inconsistencies in the research results render it difficult to ascertain what types of educational experiences would most likely promote desirable positive affect. Furthermore, previous investigations in the area of affect

have for the most part failed to recognize the interrelationship of instructional variables. That is, they have chosen to isolate one specific variable and study its relationship with the criterion - affect. This study explored the relationship of integrated categories of instructional variables with student affect or liking for a course they have just completed. The instructional variables included in this study accounted for a substantial amount of variance (.43) in overall affect. The results of this investigation revealed that of the four general instructional variables (i.e., content, method, readings, and interaction), the instructor's method accounted for the most variance (i.e., 9% unique variance and 18% summed unique and common variance). Apparently how well the instructor acts or functions as a human facilitator of student interaction with instructional material is important to overall student affect toward the course.

Of the four general instructional variables included in this study, readings was the second greatest predictor of affect, accounting for an additional 7% of the variance (16% summed unique and common variance). Although studies have not examined the relationship between readings and affect (most are concerned with content analysis), the findings of the present study are consistent with an incidental observation made by the author. Under new directorship, a basic theory of public speaking course at West Virginia University that had been consistently rated as one of the worst courses in the department received one of the highest ratings in the department. The high rating was clearly attributed to how the textbook was being used (McCroskey, 1978). The greatest recorded difference on the course and instructor evaluation at the end of the semester was the rating the students gave the text - an increase of two points on a five-point scale.

A great deal of research and discourse has been given to the importance of interaction in the classroom (e.g., Dunkin and Biddle, 1974; Gibb, 1951; McKeachie, 1969b; Rosenshine, 1971). Recently a number of researchers in educational psychology and speech communication have examined the relationship between affect and one specific variable contained within interaction - nonverbal interaction or immediacy. Andersen (1978) found teacher immediacy to predict 46% if the variance in student affect toward the course instructor and nearly 20% of the variance in student affect toward the content of the course. The results of the present investigation suggest that the predictive power of interaction in terms of student affect is minimal. Interaction accounted for little unique variance in affect (.0005) and in combination with other general instructional variables, only accounted for 5% of the variance (significantly less than the 13 to 18% accounted for by the combinations of the other variables). One possible explanation for the inconsistency of the results of the present study and the research by Andersen is the sample population employed. The present study utilized students enrolled in courses from a variety of disciplines across the campus, whereas Andersen's subjects were students in basic speech communication courses only. Perhaps students enrolled in speech communication courses demand or expect interaction.

Competence, one of the five dimensions of credibility, refers to the degree to which a student perceives the teacher to be knowledgeable or expert in a given subject matter. At the college level, if the student perceives the instructor to have little knowledge of the subject, the instructor will probably have little impact on the student's thinking as a result of their communication in the classroom (Hurt, Scott, and McCroskey, 1978). The results of this investigation indicate that competence is also important to a student's level of affect for a course. Among the five dimensions of credibility, competence was the greatest predictor of affect (i.e., 4% unique variance and 21% summed unique and common variance accounted for). It should be noted that although competence was the greatest predictor of affect, two other dimensions of credibility were nearly as predictive of overall student affect as competence. Sociability and composure each accounted for 19% summed unique and common variance in overall student affect.

The results of this investigation suggest that instructors can produce higher overall student affect toward their course by concerning themselves with two variables - competence and instructor's method. For this reason, an institutional strategy designed to increase affect might prove most effective and most economical simply by focusing on these two variables.

The purpose of this study was to focus on the question, "Why do students like a course they have taken?" Knowing what maximizes the liking for a course could be invaluable to the instructor in creating a healthy classroom environment conducive for learning. Although the results of this research indicate the predictive value of competence and instructor's method for the prediction of overall student affect for a course they have taken, it is clear that no one instructional variable represents the educational panacea. The results of this investigation suggest a need for comprehensive and systematic research on the predictors of affective variables in academic environments which in turn may help our understanding of the optimal conditions for generating positive student affect in our classrooms.

Although many (e.g., Goldberg, 1980; Miller & Young, 1980) have pointed out that the instructor at the community college has questions or problems that the instructor at the four-year institute does not have to contend with, it should be noted that we do share many of the same problems (but perhaps not necessarily the same solutions). Although this study was completed at the State University of New York at Geneseo, the issue of affect and satisfaction is clearly an appropriate issue to be addressed at the community college level.

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Table 1

Means and Standard Deviations
(N=262)

Variable (Range)	Mean	Standard Deviation	Skewness*	Kurtosis*
Content (2-10)	8.83	1.67	-2.2198	5.3693
Method (2-10)	7.69	2.01	-0.7629	-0.1905
Readings (2-10)	6.90	2.02	-0.5285	-0.3432
Interaction (3-15)	12.99	1.98	-1.1438	1.6172
Sociability (3-15)	13.23	1.87	-0.9369	0.6643
Composure (3-15)	12.31	2.49	-0.7663	-0.1797
Character (2-10)	8.58	1.58	-1.0580	0.7422
Extroversion (2-10)	6.81	1.31	0.2011	0.5174
Competence (2-10)	8.62	1.30	-0.7145	-0.1304
Behavioral Intention:				
Content (4-28)	22.64	7.18	-1.2247	0.2127
Instructor (4-28)	23.12	6.60	-1.3707	0.8574
General (4-28)	21.92	7.39	-1.0658	0.0260
Satisfaction:				
Content (4-28)	23.56	5.51	-1.7053	2.7551
Instructor (4-28)	23.83	5.61	-1.7457	2.6094
General (4-28)	23.44	5.95	-1.6613	2.2574
Affect:				
Content (4-28)	24.98	3.65	-1.3978	1.5213
Instructor (4-28)	25.08	4.29	-1.5802	1.6990
General (4-28)	24.77	4.14	-1.2781	0.8554
Overall Student Affect (36-252)	200.00	35.74	-1.1965	0.9497

*Point zero for skewness and kurtosis indicates a perfect normal distribution of sample scores. For skewness, positive numbers indicate scores skewed to the low range of the scale, whereas negative numbers indicate scores skewed to the high range of the scale. For kurtosis, positive numbers indicate a peaked distribution, whereas negative numbers indicate a flat distribution.

Table 2

Rotated Four-Factor Solution (Oblique) for
General Instructional Variables (N=262)

	Loadings*			
Item	Factor 1	Factor 2	Factor 3	Factor 4
Content:				
Does the instructor introduce significant ideas? does/does not				-.86
Does the instructor seem to be well informed and up-to-date in his/her field? yes/no				-.93
Method:				
Does the instructor use enough examples of illustrations to clarify the material? insufficient/sufficient		.94		
Does the instructor present material in an interesting way? very dull/very interesting		.83		
Readings:				
How interesting was the assigned text? very interesting/very dull	-.89			
How valuable was the assigned text? very valuable/worthless	-.89			
Interaction:				
Considering the size of the class, did you feel free to ask questions, disagree, express ideas, etc.? free/not free			-.85	
Was the instructor responsive to feedback from the class? responsive/unresponsive			-.63	
Was the instructor available and willing to help you outside of class? yes/no			-.65	

*Loadings below .30 are not reported.

Table 3

Rotated Five-Factor Solution (Oblique) for Dimensions of Credibility (N=262)

	Loadings*				
Item	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
Sociability:					
sociable/unsociable	.87				
cheerful/gloomy	.87				
good-natured/irritable	.83				
Composure:					
nervous/poised			.84		
tense/relaxed			.86		
calm/anxious			-.66		
Character:					
selfish/unselfish				.81	
cruel/kind				.81	
sympathetic/unsympathetic**				-.37	.42
Extroversion:					
meek/aggressive		.86			
verbal/quiet**		-.33			.62
timid/bold		.80			
Competence:					
expert/inexpert					.79
reliable/unreliable					.70
unqualified/qualified**			.31	.40	-.31

*Loadings below .30 are not reported.
**Items omitted from the analysis.

Table 4

Rotated Four-Factor Solution (Oblique) for Affect, Satisfaction, and Behavioral Intention (N=262)

	Loadings*			
Item	Factor 1	Factor 2	Factor 3	Factor 4
Behavioral Intention - Content:				
likely/unlikely		.83		
impossible/possible		-.79		
probable/improbable		.86		
would not/would		-.83		
Behavioral Intention - Instructor:				
likely/unlikely		.45	.73	
impossible/possible		-.54	-.59	
probable/improbable		.54	.66	
would not/would		-.43	-.70	
Behavioral Intention - General:				
likely/unlikely		.82		
impossible/possible		-.81		
probable/improbable		.87		
would not/would	.30	-.79		
Satisfaction - Content:				
satisfying/unsatisfying	-.73			-.37
not gratifying/gratifying	.69		-.30	.34
fulfilling/unfulfilling	-.76			-.33
insufficient/sufficient	.69		-.31	.37
Satisfaction - Instructor:				
satisfying/unsatisfying	-.48		.79	
not gratifying/gratifying	.48		-.76	
fulfilling/unfulfilling	-.48		.78	
insufficient/sufficient	.43		-.79	
Satisfaction - General:				
satisfying/unsatisfying	-.81	.30		
not gratifying/gratifying	.81	-.32		
fulfilling/unfulfilling	-.81	.30		
insufficient/sufficient	.80		-.33	
Affect - Content:				
bad/good	.30			.74
worthless/valuable	.32			.77
fair/unfair		.30	.32	-.59
negative/positive	.42			.59
Affect - Instructor:				
bad/good			-.74	.35
worthless/valuable			-.76	.40
fair/unfair			.60	-.47
negative/positive			-.72	.38
Affect - General:				
bad/good	.49		-.36	.58
worthless/valuable	.48		-.30	.54
fair/unfair	-.34		.41	-.53
negative/positive	.48		-.39	.47

*Loadings below .30 are not reported.

Table 5

Interfactor Correlations for
the Four-Factor Solution

	Factor 1	Factor 2	Factor 3	Factor 4
Factor 1				
Factor 2	-.46			
Factor 3	-.56	.42		
Factor 4	.56	-.44	-.48	

Table 6

Unrotated One-Factor Solution for
Affect, Satisfaction, and Behavioral Intention
($\underline{N}$=262)

Item		Loading
Behavioral Intention - Content:	likely/unlikely	-.71
	impossible/possible	.63
	probable/improbable	-.68
	would not/would	.70
Behavioral Intention - Instructor:	likely/unlikely	-.78
	impossible/possible	.68
	probable/improbable	-.74
	would not/would	.77
Behavioral Intention - General:	likely/unlikely	-.66
	impossible/possible	.65
	probable/improbable	-.68
	would not/would	.68
Satisfaction - Content:	satisfying/unsatisfying	-.80
	not gratifying/gratifying	.81
	fulfilling/unfulfilling	-.81
	insufficient/sufficient	.80
Satisfaction - Instructor:	satisfying/unsatisfying	-.79
	not gratifying/gratifying	.76
	fulfilling/unfulfilling	-.81
	insufficient/sufficient	.77
Satisfaction - General:	satisfying/unsatisfying	-.84
	not gratifying/gratifying	.86
	fulfilling/unfulfilling	-.84
	insufficient/sufficient	.83
Affect - Content:	bad/good	.67
	worthless/valuable	.66
	fair/unfair	-.71
	negative/positive	.71
Affect - Instructor:	bad/good	.76
	worthless/valuable	.73
	fair/unfair	-.61
	negative/positive	.76
Affect - General:	bad/good	.80
	worthless/valuable	.77
	fair/unfair	-.76
	negative/positive	.79

Table 7

Correlation Coefficients for all Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
1. Content	--	.26	.35	.42	.31	.23	.21	.18	.24	.28	.30	.25	.28	.35	.28	.27	.36	.33	.36
2. Method		--	.21	.22	.46	.38	.22	.19	.38	.22	.33	.22	.42	.46	.41	.36	.49	.44	.42
3. Readings			--	.23	.24	.09	.17	.19	.30	.39	.33	.31	.33	.23	.35	.47	.27	.38	.40
4. Interaction				--	.42	.26	.38	.11	.21	.07	.21	.10	.26	.30	.23	.19	.29	.24	.23
5. Sociability					--	.44	.46	.19	.47	.22	.40	.20	.40	.52	.36	.38	.57	.42	.44
6. Composure						--	.32	.23	.41	.23	.46	.22	.41	.51	.39	.29	.50	.41	.44
7. Character							--	.19	.35	.12	.27	.10	.29	.36	.24	.29	.39	.32	.29
8. Extroversion								--	.27	.26	.29	.18	.21	.27	.27	.21	.28	.24	.31
9. Competence									--	.26	.42	.26	.37	.52	.37	.37	.56	.46	.46
10. Behavioral Intent-Content										--	.65	.79	.50	.42	.53	.52	.43	.54	.80
11. Behavioral Intent-Instructor											--	.56	.58	.51	.56	.54	.69	.62	.82
12. Behavioral Intent-General												--	.52	.38	.54	.50	.38	.56	.78
13. Satisfaction-Content													--	.67	.86	.74	.63	.78	.83
14. Satisfaction-Instructor														--	.70	.53	.83	.70	.78
15. Satisfaction-General															--	.70	.60	.79	.84
16. Affect-Content																--	.65	.83	.75
17. Affect-Instructor																	--	.76	.75
18. Affect-General																		--	.84
19. Overall Student Affect																			--

Table 8

Correlations of Affect Variables and Satisfaction Variables with Canonical Variate

Variables	
PREDICTOR VARIABLES	
Affect:	
Subject	.78
Instructor	.94
General	.93
CRITERION VARIABLES	
Satisfaction:	
Content	.87
Instructor	.95
General	.85
Canonical Correlation Between Groups	.86
Chi-square	509.34
Significance Level	.0001

Table 9

Correlations of Instructional Variables and Liking Variables with Canonical Variates

Variables	Run 1	Run 2	Run 3
PREDICTOR VARIABLES			
Content	.50	.62	*
Method	.68	.82	*
Readings	.40	.65	*
Interaction	.42	.47	*
Sociability	.77	*	.80
Composure	.72	*	.76
Character	.53	*	.55
Extroversion	.39	*	.40
Competence	.76	*	.79
CRITERION VARIABLES			
Behavioral Intention:			
Content	.49	.61	.43
Instructor	.77	.74	.77
General	.45	.56	.41
Satisfaction:			
Content	.74	.83	.70
Instructor	.91	.85	.92
General	.72	.83	.67
Affect:			
Content	.68	.74	.63
Instructor	.97	.91	.97
General	.81	.90	.77
Canonical Correlations			
Between Groups	.75	.61	.72
Chi-square	314.05	182.11	216.17
Significance Level	.0001	.0001	.0001

*Omitted from this run

Table 10

Commonality Analysis of Overall Student Affect for a Course (Part 1: General Instructional Variables)

	X_1	X_2	X_3	X_4	Y	B_1
Correlation Matrix* and Standardized Regression Weights						
X_1 Content	1.0000	.0670	.1229	.1799	.1283	3.68
X_2 Method	.2588	1.0000	.0448	.0484	.1756	5.53
X_3 Readings	.3506	.2116	1.0000	.0545	.1634	4.81
X_4 Interaction	.4242	.2199	.2334	1.0000	.0530	.46
Y Overall Student Affect for a Course	.3582	.4190	.4042	.2302	1.0000	

*Entries below the diagonal of the correlation matrix are simple correlation coefficients while those above the diagonal are R^2 or squared zero-order correlations.

Squared Multiple Correlations

$R^2_{Y.12} = .2424$ $R^2_{Y.24} = .1956$ $R^2_{Y.134} = .2201$

$R^2_{Y.13} = .2168$ $R^2_{Y.34} = .1829$ $R^2_{Y.234} = .2861$

$R^2_{Y.14} = .1358$ $R^2_{Y.123} = .3072$ $R^2_{Y.1234} = .3077$

$R^2_{Y.23} = .2797$ $R^2_{Y.124} = .2484$

Table 11

Variance in Overall Student Affect for a Course Associated with General Instructional Variables

Component	Explained Variance
Unique to:	
Content	.0216
Method	.0876
Readings	.0633
Interaction	.0005
Subtotal	.1730
Common to:	
Content and Method	.0156
Content and Readings	.0272
Content and Interaction	.0059
Method and Readings	.0210
Method and Interaction	.0028
Readings and Interaction	.0015
Content, Method, and Readings	.0184
Content, Method, and Interaction	.0103
Content, Readings, and Interaction	.0121
Method, Readings, and Interaction	.0027
Content, Method, Readings, and Interaction	.0172
Subtotal	.1347
Total	.3077

Table 12

Commonality Analysis Summary Table

The General Instructional Variables as Predictors of Overall Student Affect for a Course

Unique and Common Effects	Content	Method	Readings	Interaction
Unique to:				
Content	.0216			
Method		.0876		
Readings			.0633	
Interaction				.0005
Common to:				
Content and Method	.0156	.0156		
Content and Readings	.0272		.0272	
Content and Interaction	.0059			.0059
Method and Readings		.0210	.0210	
Method and Interaction		.0028		.0028
Readings and Interaction			.0015	.0015
Content, Method, and Readings	.0184	.0184	.0184	
Content, Method, and Interaction	.0103	.0103		.0103
Content, Readings, and Interaction	.0121		.0121	.0121
Method, Readings, and Interaction		.0027	.0027	.0027
Content, Method, Readings, and Interaction	.0172	.0172	.0172	.0172
Total	.1283	.1756	.1654	.0530

Table 13

Commonality Analysis of Overall Student Affect for a Course
(Part 2: The Dimensions of Credibility)

		X_1	X_2	X_3	X_4	X_5	Y	B_1
Correlation Matrix* and Standardized Regression Weights								
X_1	Sociability	1.0000	.1947	.2159	.0346	.2220	.1899	3.53
X_2	Composure	.4413	1.0000	.1015	.0548	.1666	.1934	3.09
X_3	Character	.4647	.3186	1.0000	.0139	.1257	.0867	.91
X_4	Extroversion	.1859	.2340	.1180	1.0000	.0728	.0935	4.19
X_5	Competence	.4712	.4082	.3545	.2699	1.0000	.2127	6.32
Y	Overall Student Affect for a Course	.4358	.4398	.2944	.3057	.4612	1.0000	

*Entries below the diagonal of the Correlation Matrix are simple correlation coefficients while those above the diagonal are R^2 or squared zero-order correlations.

Squared Multiple Correlations

$R^2_{Y.12} = .2659$	$R^2_{Y.25} = .2886$	$R^2_{Y.125} = .3178$	$R^2_{Y.453} = .2665$	$R^2_{Y.2345} = .3188$
$R^2_{Y.13} = .2007$	$R^2_{Y.34} = .1611$	$R^2_{Y.134} = .2513$	$R^2_{Y.253} = .2960$	$R^2_{Y.12345} = .3404$
$R^2_{Y.14} = .2422$	$R^2_{Y.35} = .2323$	$R^2_{Y.135} = .2770$	$R^2_{Y.1234} = .3037$	
$R^2_{Y.15} = .2740$	$R^2_{Y.45} = .2481$	$R^2_{Y.145} = .3035$	$R^2_{Y.1235} = .3189$	
$R^2_{Y.23} = .2199$	$R^2_{Y.123} = .2712$	$R^2_{Y.245} = .3114$	$R^2_{Y.1245} = .3392$	
$R^2_{Y.24} = .2369$	$R^2_{Y.124} = .2998$	$R^2_{Y.243} = .2603$	$R^2_{Y.1345} = .3064$	

Table 14

Variance in Overall Student Affect for a Course Associated with the Five Dimensions of Credibility

Component	Explained Variance
Unique to:	
Sociability	.0216
Composure	.0340
Character	.0012
Extroversion	.0215
Competence	.0367
Subtotal	.1150
Common to.	
Sociability and Composure	.0183
Sociability and Character	.0062
Sociability and Extroversion	.0013
Sociability and Competence	.0218
Composure and Character	.0017
Composure and Extroversion	.0079
Composure and Competence	.1184
Character and Extroversion	-.0001[a]
Character and Competence	.0027
Extroversion and Competence	.0110
Sociability, Composure, and Character	.0093
Sociability, Composure, and Extroversion	.0035
Sociability, Composure, and Competence	.0285
Sociability, Character, and Extroversion	.0001
Sociability, Character, and Competence	.0133
Sociability, Extroversion, and Competence	.0066
Composure, Extroversion, and Competence	.0102
Composure, Extroversion, and Character	.0002
Composure, Competence, and Character	.0035

(continued)

(continued)

Component	Explained Variance
Common to:	
Extroversion, Competence, and Character	.0015
Sociability, Composure, Character, and Extroversion	.0010
Sociability, Composure, Character, and Competence	.0297
Sociability, Composure, Extroversion, and Competence	.0124
Sociability, Character, Extroversion, and Competence	.0016
Character, Composure, Extroversion, and Competence	.0001
Sociability, Composure, Character, Extroversion, and Competence	.0147
Subtotal	.2254
Total	.3404

[a]Negative value indicates a suppressor variable.

Table 15

Commonality Analysis Summary Table

The Five Dimensions of Credibility as Predictors of Overall Student Affect for a Course

Unique and Common Effects	Sociability	Composure	Character	Extroversion	Competence
Unique to:					
Sociability	.0216				
Composure		.0340			
Character			.0012		
Extroversion				.0215	
Competence					.0367
Common to:					
Sociability and Composure	.0183	.0183			
Sociability and Character	.0062		.0062		
Sociability and Extroversion	.0013			.0013	
Sociability and Competence	.0218				.0218
Composure and Character		.0017	.0017		
Composure and Extroversion		.0079		.0079	
Composure and Competence		.0184			.0184
Character and Extroversion			-.0001	-.0001	
Character and Competence			.0027		.0027
Extroversion and Competence				.0110	.0110
Sociability, Composure, and Character	.0093	.0093	.0093		
Sociability, Composure, and Extroversion	.0035	.0035		.0035	
Sociability, Composure, and Competence	.0285	.0285			.0285
Sociability, Character, and Extroversion	.0001		.0001	.0001	
Sociability, Character, and Competence	.0133		.0133		.0133
Sociability, Extroversion, and Competence	.0066			.0066	.0066
Composure, Character, and Extroversion		.0002	.0002	.0002	
Composure, Character, and Competence		.0035	.0035		.0035
Composure, Extroversion, and Competence		.0102		.0102	.0102
Character, Extroversion, and Competence			.0015	.0015	.0015
Sociability, Composure, Character, and Extroversion	.0010	.0010	.0010	.0010	
Sociability, Composure, Character, and Competence	.0297	.0297	.0297		.0297
Sociability, Composure, Extroversion, and Competence	.0124	.0124		.0124	.0124
Sociability, Character, Extroversion, and Competence	.0016		.0016	.0016	.0016
Composure, Character, Extroversion, and Competence		.0001	.0001	.0001	.0001
Sociability, Composure, Character, Extroversion, and Competence	.0147	.0147	.0147	.0147	.0147
Totals	.1899	.1934	.0867	.0935	.2127

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